

(sometimes strongly so), smooth or minutely scabrous with a thin webby tuft at the base; palea  $\frac{1}{4}$  shorter than its glume, narrow, smooth.

This is No. 6115 of Bolander's distribution, and recently collected by Prof. M. E. Jones, at Soda Springs, Cal. It is closely related to *Poa arctica*, which was also collected at the same place by Mr. Jones.

**STIPA PARISHII.**—Culms 1 to  $1\frac{1}{2}$  ft. high, leafy especially below; leaves conduplicate or involute, smooth, rigid and divergent, lower ones 6 inches, upper ones about 3 inches long, throat of sheath fringed with a few soft white hairs, ligule very short, upper sheath long, somewhat inflated and enclosing the base of the panicle; panicle about 6 inches long, open and somewhat spreading except at the included base, lower branches in threes, upper in pairs or single, rather few flowered at the ends of the branches and branchlets, longest rays about 2 inches; outer glumes linear-lanceolate, acute, 3 nerved, smooth, the lower one 6 to 7 lines long, the upper 5 to 6 lines, nearly twice as long as the flowering glume, which with the short stipe is 3 to 4 lines long, densely clothed with silky hairs which are longer toward the apex, bidentate, the teeth less than a line long; awn 9 lines long, smooth below, scabrous above.

Collected in the San Bernardino Mts., by Mr. S. B. Parish, for whom it is named.—G. VASEY.

**Notes on California Plants.**—*Balsamorhiza sagittata*, Nutt. grows on the west side of the Sierras at Summit, along with *Wyethia mollis*.

Dr. Gray did well to take it for granted (without proof) that *Collomia tinctoria*, Kellogg, was a var. of *C. linearis*. I have a form intermediate between the two, showing that they are not distinct as suggested in the Flora of California.

The flowers of *Eriogonum Lobbii* are sometimes ochroleucous, as well as white.

*Polygonum Muhlenbergii* grows at Santa Cruz.

The leaves of *Spiranthes Romanzoffiana* are net-veined.

*Allium platyneale* has linear-oblong reticulations. They are not absent.

The heads of *Hieracium albiflorum* are often slightly glandular in my Santa Cruz specimens, and in my Soda Springs specimens they are quite glandular even to the peduncles. The pubescence of the heads, in at least some species of *Hieracium* and *Crepis*, is a very shaky character.

It is a mistake to say that the leaves of the *Eucalyptus* of California "turn edgewise to the sun" and so give little shade. The young leaves are *pendent* and so vertical of course, but they do not show a sensitiveness by which the petiole is twisted to keep them

edgewise to the sun. The older leaves, however, are not even pendent and hold no particular position to the sun, and the trees give a great deal of shade though not as much as the broader leaved deciduous trees that have also a dense foliage.

*Helianthemum scoparium* is an almost shrubby perennial.

*Arabis platysperma*, in robust specimens has auricled leaves: the pubescence is more branched than "stellate."

*Arenaria Douglasii* has concentrically striate seeds, and they are often hairy at the hilum.

*Hosackia subpinnata* undoubtedly shows a transition to *H. Purshiana*.

I have what I suppose must pass for *Oxytheca dendroidea*, from Nevada. My specimens have all but the lowest bracts in twos; leaves hirsute, linear-oblongate; awns  $1\frac{1}{2}$  to 3 times the length of the involucre; flowers hirsute; pedicel and involucre glabrous, all the often of the plant with stalked glands and some stellate hairs.

*Mentzelia trifoliata* grows in patches acres in extent in the Sierras and at Park City, Utah.

*Juniperus occidentalis*. I found a peculiar form of this with seed protruding from the berry like an acorn in the cup. Dr. Engelmann informs me that this sometimes occurs. I had never seen it in any *Juniperus* before. The leaves also have a large pellucid spot in the center.

The corolla of *Trifolium barbigerum* is very beautiful under a microscope magnifying about 30 diameters; it is covered with a white or purple net-work with circular meshes. The same is true of *T. cyathiferum* though in a less marked degree.

The seeds of *Hosackia strigosa* appears to the eye to be almost square with a notch on one side. They are, at least in my numerous specimens, a sure index to the species.

*Hosackia maritima* is often perfectly smooth, leaflets 6-7, stems 2° long, prostrate.

*Hosackia Torreyi* has the standard beautifully veined with purple.

*Trifolium microcephalum* has the lobes of the involucre often two-toothed.

My specimens of *Trifolium microdon* are very smooth except the pedicels.

*Cornus Californica* has very interesting branched hairs. The pubescence of *Platanus racemosa* called "tomentum" in *Bot. Cal.* is made up of very long hairs, branched in whorls or singly and jointed, densely matted, with straight, simple, rather flat hairs on the very young stems. The pubescence is more beautiful than that of *Alternanthera lanuginosa*.

I have *Hosackia oblongifolia* from Santa Cruz, which verifies Mr. Coulter's locality, upon which doubt is thrown in *Bot. Cal.*

Dr. Engelmann's note on *Eschscholtzia Californica*, in the GAZETTE, reminds me of the broad patches of this plant growing at Santa Cruz on chalky hills. I have seen a mat three feet in diameter growing from one thick root, with plenty of remains of former flowering stems still attached to the plant, showing that it is a perennial as Dr. E. suggests. It is strikingly different from the annual form in Southern Utah, but I doubt its claim to distinctness because of being a perennial.

The base of the petiole of leaves of *Ivesia Kingii* are strikingly hairy, but the hairs are concealed by the decaying remains of the outer leaves. The pubescence is as remarkable as that of *Lygodesmia spinosa*.—MARCUS E. JONES, Salt Lake City.

**Notes from a Laboratory.**—It is not unwelcome to teachers who have little spare time to know just what plant to give to a student of Vegetable Histology with the certainty that the particular tissue under consideration will be found in such form as to render it desirable for examination. With the object, therefore, of recommending a few common green-house plants, in which illustrative examples of the prominent tissues can be found, the following notes, from the work of the Sophomore class of Purdue University, are presented. Most of this work passed under my personal observation.

Of course every one will (if he be not too forgetful) have a good stock of pumpkin or squash stem to illustrate the dicotyledonous stem, and next spring all of us, by Dr. Bessey's recommendation, will lay in a supply of asparagus for the monocotyledonous one. Other plants are frequently wanted however, and the following to be had from almost any green house or window-garden, will be found useful:

*Geranium* (sp?)\* exhibits an abundance of fine compound crystals in a transverse section of the leaf and a few in petiole and stem. Its starch grains are large and abundant (the plant was just well started from a slip) and the layers of cork-cells are numerous and regular.

*Ageratum Mexicanum* (Blue Ageratum). Collenchyma well shown.

*Primula Sinensis* (Primrose) has particularly fine trichomes. The presence of chlorophyll bodies in the epidermis is also a marked feature.

*Nerium roseum* (Oleander) is peculiar on account of the arrangement of the stomata in groups at the bottom of hairy pits in the under surface of the leaf.

\*The specific names, when any are given, cannot be vouched for. They are as given me by our florist. All of the plants can be identified either by the common or generic names.